

**RESPONSE TO OFFICE ACTION**

Serial No. 10/608,670

Page 7 of 9

**REMARKS**

This response is intended as a full and complete response to the Office Action dated April 13, 2005. In view of the amendments and the following discussion, the Applicants believe that all claims are in allowable form.

**ELECTION OF CLAIMS**

The Applicants confirm the election of claims 1-26. Claims 27-31 have been cancelled without prejudice. The Applicants reserve the right to file continuing and/or divisional applications to prosecute the non-elected subject matter.

**CLAIM REJECTIONS****A. 35 U.S.C. § 112 Claims 4-8, 14-16, and 22**

Claims 4-8, 14-16, and 22 stand rejected as being indefinite. In response, the Applicants have amended claims 1, 11 and 19 to provide proper antecedent basis for the term "the density of the free radicals" recited in claims depending therefrom.

Thus, the Applicants submit that claims 4-8, 14-16, and 22, as they now stand, fully satisfy the requirements of 35 U.S.C. § 112. Accordingly, the Applicants respectfully request the rejection be withdrawn.

**B. 35 U.S.C. §103(a) Claims 1-26**

Claims 1-26 stand rejected as being unpatentable over United States Patent No. 6,797,634 B2, issued September 28, 2004 to *Suzuki* in further view of United States Patent No. 6,143,144 issued November 7, 2000 to *Golovato et al.* (hereinafter referred to as "*Golovato*"). In response, the Applicants have amended claims 1-8, 12-16, 18-24 to more clearly recite aspects of the invention.

Independent claims 1, 11, and 19, as amended, recites limitations not taught, shown or suggested by *Suzuki* and *Golovato*, alone or in combination. *Suzuki* teaches a method of conditioning an etching chamber 11 using a) a first step of etching a dummy wafer in presence of a plasma containing at least one of chlorine and bromine and b) a

363520

**RESPONSE TO OFFICE ACTION****Serial No. 10/608,670****Page 8 of 9**

second step when the plasma contains an oxygen-containing conditioning gas (col. 3, lines 4-12; FIG. 1).

*Golovato* teaches etching an oxide layer on a substrate 27 in a processing chamber 12 having a second substrate (focus ring) 28 disposed around the substrate 27 (col. 5, lines 14-18). The focus ring 28 is formed from anodized aluminum, silicon, or silicon carbide. During etching the substrate 27 in oxygen plasma, the particles from the focus ring 28 react with plasma activated oxygen and form oxygen-containing compounds. The compounds are evacuated from a process space or deposited on chamber walls (col. 7, lines 20-28). The inventors of *Golovato* utilized light emission intensities from oxygen and Ar to compare plasma densities measured during the plasma etch processes as proof that the taught plasma process is effective for reducing activated oxygen present during processing (col. 11, lines 18-43).

Thus, *Golovato* does not teach or suggest measuring a density of free radicals, utilizing density of free radicals as a process control parameter or that any teachings therein are applicable to a conditioning process. Therefore, *Golovato* does not teach or suggest a modification to the etch chamber conditioning process described by *Suzuki* that would result in a method that includes:

A) inserting a non-production wafer into a plasma chamber, striking a plasma of a probing gas comprising a source of free radicals, and measuring a density of free radicals to determine whether to commence plasma processing of a production wafer on the basis of the measured density of the free radicals, as recited in claim 1;

B) striking a plasma of a seasoning gas comprising a source of free radicals, seasoning a plasma chamber, and measuring a density of free radicals to determine if seasoning is complete according to the measured density of the free radicals, as recited in claim 11; or

C) striking a plasma of a processing gas comprising a source of free radicals, and measuring a density of free radicals to determine an extent of process drift according to the measured density of the free radicals, as recited in claim 19.

## RESPONSE TO OFFICE ACTION

Serial No. 10/608,670

Page 9 of 9

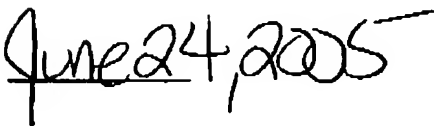
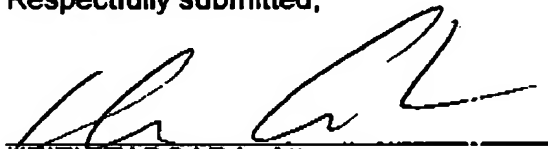
Thus, the Applicants submit that independent claims 1, 11, and 19 and claims 3-8, 10, 13-16, 18, 21-24, and 26 depending therefrom are patentable over *Suzuki* in view of *Golovato*. Accordingly, the Applicants respectfully request the rejection be withdrawn.

**CONCLUSION**

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited.

If, however, the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Mr. Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Handwritten signature of Keith Taboada, dated June 24, 2005.  
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